

Reteach: Solve Two-Step Inequalities

A **two-step inequality** is an inequality that contains two operations. To solve a two-step inequality, use inverse operations to undo each operation in reverse order of the order of operations.

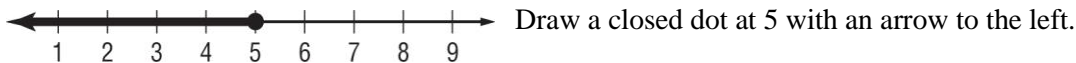
Example 1

Solve $4x - 2 \leq 18$. Graph the solution set on a number line.

| | |
|--|---------------------------------|
| $4x - 2 \leq 18$ | Write the inequality. |
| $\frac{4x - 2}{+2} \leq \frac{18}{+2}$ | Addition Property of Inequality |
| $4x \leq 20$ | Simplify. |
| $\frac{4x}{4} \leq \frac{20}{4}$ | Division Property of Inequality |
| $x \leq 5$ | Simplify. |

The solution is $x \leq 5$.

Graph the solution set.



Check $4x - 2 \leq 18$ Write the inequality.

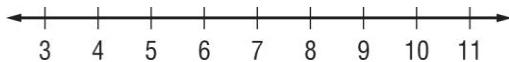
$4(3) - 2 \stackrel{?}{\leq} 18$ Replace x with a number less than or equal to 5.

$10 \leq 18$ This statement is true.

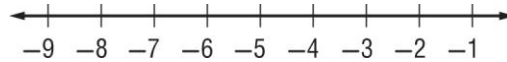
Exercises

Solve each inequality. Graph the solution set on a number line.

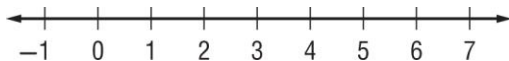
1. $3x - 4 < 17$



2. $-2 - x \leq 3$



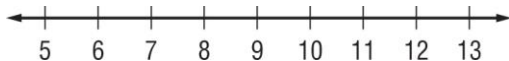
3. $12 < 2x + 6$



4. $\frac{x}{2} - 3 \leq -2$



5. $7 > x - 2$



6. $1 \geq -\frac{x}{3} + 1$

